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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/662,849	09/15/2000	Martin Schuessler	1748X/49153	2146
7590 CROWELL & MORING, L.L.P. P.O. Box 14300 Washington, DC 20044-4300			EXAMINER BHAT, NINA NMN	
			ART UNIT 1797	PAPER NUMBER
			MAIL DATE 02/21/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

09/662,849

Applicant(s)

SCHUESSLER, MARTIN

Examiner

N. Bhat

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6 and 8-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6 and 8-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-883C)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

1. Applicant's newly submitted drawings of November 29, 2007 is approved by the examiner. Applicant's arguments of November 29, 2007 has been fully and carefully considered applicant's arguments are persuasive with respect to the obviousness rejection over Gonjo et al., Schussler et al. and further in view of Koga et al. applicant's arguments are persuasive. Accordingly the rejection is withdrawn. However, it is the opinion of the examiner that the rejection under 35 U.S.C. 103(a) over Autenrieth et al. is proper and does render applicant's invention as a whole obvious and is repeated.
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-4, 6 and 8-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Autenrieth et al., US Patent 6,447,736.

Autenrieth et al. teach the invention substantially as claimed. Autenrieth et al. teach a modular system for heating or converting at least one medium, the system includes at least a reactor and a heat exchanger, having layers arranged in a stack, the layers include catalytic material. The modular system includes separator devices, which

divide the reactor into a plurality of function areas, specifically Autenrieth et al. teach the system includes an evaporator and reforming sections. From Figure 2, Autenrieth et al. teach which includes a system that includes modules (9, 12, 16, 19), which do not adjoin one another directly but with the insertion of one thermally insulating plate (24,25,26). The system includes an evaporator/burner module 9, which is thermally uncoupled from the oxidation stage/pre-reforming module(12). The oxidation stage/pre-reforming module (12) is thermally uncoupled from the shift stage/pre-reforming module(16), and the shift stage/pre-reforming module (16) is thermally uncoupled from the reforming/burner module (19). [Note Column 4, lines 55-65] Autenrieth et al. teach that each module 9,12,15 and 19 can be constructed of an individually determinable number of plate layers so that by means of simple modifications and optimal adaptation is permitted to the respective application. The system as described provides material which passes through the layers or flows over the layers having pressure drops which would be expected to one having ordinary skill in the art. With respect the limitations as described in claim 4, from Figure 2 and from the description as referred to above, Autenrieth et al. teach insulating plates which divide the stacked layers into thermally insulated function area. From Figure 2, the insulating plates extend essentially parallel to the layers. Regarding applicant's limitations regarding the educts which extend through at least a portion of the layers, the connection ducts and product ducts this has been taught and suggested as specifically described in Figure 3, Column 5, lines 59 to Column 6, lines 1-15.

However, with respect to the specific end plate, the end plate construction being aluminum, clamping and tie rod arrangement. These limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because Autenrieth et al. teach providing a system for methanol reforming in a system which includes a modular reaction unit of the plate stack which is integrated to provide an catalytic burner that is in thermal contact with the evaporator which is adjoined by an oxidation stage/reforming module (12) also including a plate stack construction each section, i.e. between the evaporator section and reforming section there is included an insulating plate. With respect to the end plate, although not expressly taught this is implicitly suggested by the modular construction and insulating plate as described by the reactor to specifically use the end plate between modules would have been obvious to one having ordinary skill. With respect to the material, of the end plate being aluminum, and artisan familiar with reactor design and heat exchange would be able to recognize from the teachings of Autenrieth et al. to select a particular plate material for constructing the reactor and evaporator/heat exchange modular systems. With respect to the clamping and tie rod and sealing arrangement these limitations would have been an obvious design choice to one familiar with providing modular stack type reactors absent criticality in showing.

5. Applicant argues that "Autenrieth's mere disclosure of insulating plates between different modules does not disclose or suggest insulating plates between the modules and end plates" It is the position taken by the examiner that Autenrieth's teaches applicant's system which includes heating or converting at least one medium having an

evaporator, a reactor and heat exchanger. The reactor of Autenrieth as shown in Figure 2 include a modular plate stack reactor which is integrated to provide an catalytic burner that is thermal contact with the evaporator which is direct communication with a reforming modules. There is a specific teaching that there can be an insulating plate which is position between the evaporator section and the reforming section, the insulating plate is located between a plurality of function areas that being an insulating plated between the evaporator section and the reforming section. It is maintained that the prior art does teach and suggest placing an insulating plate between function arias and the positioning of the insulating plate would have been obvious to one having ordinary skill in the art absent criticality in showing. Applicant is also reminded that arguments is not evidence. Applicant should clearly point out why the system of Autenrieth is not capable of function as claimed by applicant.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. Bhat/
Primary Examiner, Art Unit 1797

Application Number**Application/Control No.**

09/662,849

**Applicant(s)/Patent under
Reexamination**

SCHUESSLER, MARTIN

Examiner

N. Bhat

Art Unit

1797